"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

L 22437-66
ACC NR: AP6013624 SOURCE CODE: UR/0104/65/000/009/0019/0024

AUTHOR: Berman, L. D. (Doctor of technical sciences); Benenson, Ye. I. (Candidate of technical sciences); Pchelkina, I. L. (Engineer)

ORG: none

TITLE: Choice of optimum size condenser and cooling systems for large heating plant turbines

SOURCE: Elektricheskiye stantsii, no. 9, 1965, 19-24

TOPIC TAGS: cooling, turbine, heating engineering, turbine cooling

ABSTRACT: During the design of large scale heating-plant turbine assemblies it is of great importance to find, for given meteorological conditions, the matched values of the coolant water consumption, the dimensions of the cooling system and of the condenser, and, in a general case, the discharge cross section of the turbine corresponding to a minimum of estimated losses over a given period of the year. The calculation of these optimum matched quantities, presented in the paper, were carried out jointly by the Turbomotornyy zavod (Turbo-engine plant), Mosenergoproyekt, and VTI (Vsesoyuznyy teplotekhnicheskiy institut imeni F.E. Dzerzhinskogo [All-Union Thermal-Engineering Institute im. F.E. Dzerzhinskiy]) in conjunction with the design of the TP-250-240 turbines (560-565°C, 250 MW of nominal electrical power, 330 Gcal/h of thermal

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load, 300 MW of maximal electric power during condenser operation). Results show that for condenser turbines earmarked for the Moscow rayon and containing a recirculating water system with hyperbolic tower cooler the optimum values of vapor pressure (30-40 $kg/m^2.h$) and cooling multiplicity factor (60-70) are generally the same as in the case of pure condensation turbines. The cost reduction is mostly possible by a reduction in size of the cooling system. During the summer months in turbines with low steam removal for water heating purposes the increased reflux density (8-10 $m^3/m^2.h$) leads to increased steam pressures within the condenser. A similar analysis of the new T-100-130 turbines leads to values for the increased optimum reflux density in cooling hyperbolic towers which are higher than the nominal density assumed in the past by the Teploelektroproyekt Institute. Consequently, in the future one must increase the capacity of the water distributing devices of typical cooling towers. Orig. art. has: 7 figures and 4 tables. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 003

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

ACC NR: AP6032189 SOURCE CODE: UR/0096/66/000/010/0089/0092

AUTHORS: Berman, L. D. (Doctor of technical sciences, Professor); Yefimochkin, G. I. (Candidate of technical sciences)

ORG: All-Union Heat Engineering Institute (Vsesoyuznyy teplotekhnicheskiy institut)

TITLE: Characteristics and design of low-pressure water-jet ejector pumps

SOURCE: Teploenergetika, no. 10, 1966, 89-92

TOPIC TAGS: ejector pump, water pump, fluid pressure, flow characteristic, Reynolds number, fluid viscosity, surface tension, low pressure pump

ABSTRACT: This paper presents tests of low-pressure water-jet ejector pumps, performed to obtain data for designing ejector pumps. Six interchangeable tapered working nozzles with output diameters of 11--22 mm were used in the tests. The length of the cylindrical part of the mixing chamber $l_3 = 8.85d_3$ (d_3 is the diameter of the mixing chamber) and $l_3 = 0$ (see Fig. 1). Air could be admitted into the receiving chamber of the pump through three calibrated apertures with diameters of 1.5, 2.0, and 2.8 mm. The pressure and temperature of the working water were 1.3--5 bar and 5--15C. It was found that the cylindrical section of the mixture chamber expands the range of stable operation of the pump. This work is a continuation of several earlier reports by L. D. Berman and G. I. Yefimochkin

UDC: 621.176.001.24

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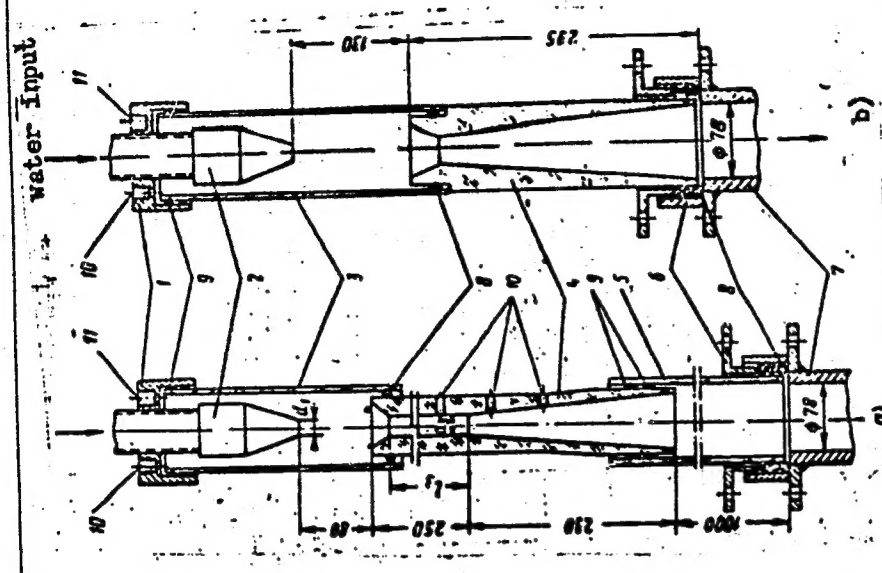

Fig. 1. Experimental ejector pumps: 1 - cover of receiving chamber; 2 - working nozzle; 3 - receiving chamber; 4 - mixing chamber and exit cone (Plexiglas); 5 - glass overflow pipe; 6 - coupling; 7 - metal overflow pipe; 8 - rubber gasket ring; 9 - packing; 10 - opening for measuring pressure; 11 - calibrated opening for admission of air

(Teploenergetika, No. 7, 1964; No. 8, 1964). Orig. art. has: 3 diagrams, 5 graphs, 4 formulas, and 1 table.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 008

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L. G., Physician

"The Influence of X Rays on the Function of Erythropoiesis (Experimental Study)." Sub 5 May 47, Second Moscow State Medical Inst imeni I. V. Stalin

Dissertations presented for degrees in science and engineering in Moscow in 1947 Cand Medical Sci

SO: Sum No. 457, 18 Apr 55

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

KOPEL'MAN, S.L.; Berman, L.G.

[X-ray diagnosis in stomatology] Rentgenodiagnostika v stomatologii. 2. izd., ispr. i dop. Moskva, 1953. 170 p. (MLRA 7:2)
(X rays in dentistry)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

DOLITSKIY, V.A.; BERMAN, L.I.

Upthrust at the western end of the Zhiguli bank discovered by borehole observations. Dokl.AN SSSR 138 no.6:1413-1416 Je '61.
(MIRA 14:6)

1. Predstavleno akademikom A.L.Yanshinym.
(Zhiguli Mountains—Faults (Geology))

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BERMAN, L. L.

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USSR/Topographical Survey 6203.0100 1947

"Contemporary Glaciation of the Sources of the Indigirka River," L. L. Berman, 34 pp

"Voprosy Geografii" Fourth Symposium

Presents earlier information on glaciers, work of Aero-Geodetic Administration, an orohydrographical review, climatic characteristics, description of glaciers, glacial forms of topography, and present status of glaciers in region studied. Includes maps and extensive statistical charts.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

OSTROVSKIY, M.I.; BERMAN, L.I.

Correlation of Devonian sediments in the southwestern regions of the Udmurt A.S.S.R. in connection with petroleum exploration drilling. Geofiz. razved. no.12: 110-119 '63. (MIRA 16:11)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L.L.

Approximation by interpolation polynomials of functions satisfying a Lipschitz condition
Dokl. AN SSSR. 85, no. 3, 1952

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L.M.

Sapozhkov's operation in cancer of the penis. Trudy Inst. klin. i eksp. khir. AN Kazakh. SSR 8:114-117 '62.
(MIRA 17:7)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L.S.

AUTHOR: Berman, L. S., Real Member of the Society. 108-11-7/10

TITLE: Increase of the Effective Power of a Resonance-Semiconductor-Amplifier by Way of Increasing its Degree of Efficiency. Part 1. (Povysheniye poleznoy moshchnosti rezonansnogo poluprovodnikovogo usilitelya putëm povysheniya yego kpd, ch. 1).

PERIODICAL: Radiotekhnika, 1957, Vol. 12, Nr 11, pp. 62-65 (USSR).

ABSTRACT: A semiconductor triode has practically no limitation as to the emission current and the increase of the effective power in it is mainly limited by the admissible dispersion capacity. It is shown that the effective power as compared to the usual scheme at the same dispersion capacity in both cases can be increased by more than the double if the degree of efficiency of the resonance semiconductor-amplifier is increased by use of an additional circuit tuned to the third harmonic vibration. It is demonstrated that in this way the degree of efficiency can be increased from: 75 ÷ 76 % up to 87 ÷ 88 % and the effective power by the 2,0 to the 2,1-fold.
There are 3 figures, 2 tables, and 4 references, 3 of which are Slavic.

SUBMITTED: September 9, 1956 (initially) and February 21, 1957 (after revision).

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

Increase of the Effective Power of a Resonance-Semiconductor (Cont.)

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific-technical Society of Radio Engineering and Electrical Communications im. A.S. Popov)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L.S.

57-6-6/36

AUTHOR: BERMAN, L.S.

TITLE: Use of Hall Effect in Semiconductors for Electric Power Measurement. (Ispol'zovaniye effekta Kholla v poluprovodnikakh dlya izmereniya elektricheskoy moshchnosti, Russian)

PERIODICAL: Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 6, pp 1192-1196 (U.S.S.R.)

ABSTRACT: The investigations showed that it is possible to use the Hall effect in semiconductors for the measurement of electric power in the whole frequency range from direct current to the centimeter waves.
The use of "semiconductor" watt meters with frequencies of several hundres of kilocycles per second and more is the most useful. The difficulties for the formation of magnetic fields become, however, greater with increasing frequency. It is more useful to use transmitters of InSb and not of n-germanium. The former have a smaller non-linearity of the contacts and the equilibrium is more easily fired. As the Hall EMF is small it is useful to amplify it by means of d.c.magnetic amplifiers. This makes it possible to use an ordinary milli-amperemeter as indicator instead of a galvanometer.

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57-6-6/36

Use of Hall Effect in Semiconductors for Electric Power Measurements.

It is necessary to work out a production process for transmitters which makes a decrease of the rectification at the contacts possible. (With 5 Illustrations and 1 Slavic Reference).

ASSOCIATION: Institute for Semiconductors of the Academy of Science of the U.S.S.R.

PRESENTED BY:

SUBMITTED: 29.12.1956

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, L.S

57-27-7-28/40

AUTHORS: Berman, L. S., Raykhman, S. S., Khalfin, Z. A.

TITLE: A Balanced Modulator Based on the Hall-Effect in Semiconductors (Balansnyy modulyator na effekte Kholla v poluprovodnikakh).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 57, Nr 7, pp. 1597-1598 (USSR)

ABSTRACT: It is shown that the Hall-effect permits to build up a scheme of a balanced modulator, as the Hall-effect yields a sum and a difference of two frequenciers which are indeed required for a balanced modulator. The experiments described here were performed in order to prove that the linearity of the transformation is the advantage of such a modulator, i. e. that only the sum-frequency (f_c+f_i) and the difference-frequency (f_c-f_i) are present at the inlet and that all other frequencies are absent. The scheme of a balanced modulator was investigated with the use of a film-transmitter of HgSe. The experiments showed that the linearity of the transformation amounted to 2000 (66 db). This can also be attained in balanced modulators of the common type.

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A Balanced Modulator Based on the Hall-Effect in Semiconductors

57-27-7-28/40

Besides the scheme of a balanced modulator with a transmitter of n-germanium was investigated. In this case the linearity was 25 (28) db, i.e. considerably less than in the usual schemes. Thus it may be said that the balanced modulators on the basis of the Hall-effect are inferior to the usual balanced modulators with regard to sensitivity and that they offer no advantages with respect to the linearity of transformation. There is 1 figures.

ASSOCIATION: Institute for Semiconductors AS USSR, Leningrad
(Institut poluprovodnikov AN SSSR, Leningrad)

SUBMITTED: February 15, 1957

AVAILABLE: Library of Congress

Card 2/2

1. Modulators-Test results 2. Modulators-Performance
3. Semiconductors-Applications

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BERMAN, L. S.

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24(6) 9(3,4) p.2

Akademiya nauk SSSR. Institut poluprovodnikov

Poluprovodniki v nauke i tekhnike, t. 2. (Semiconductors in Science and Technology, Vol 2) Moscow, Izd-vo AN SSSR, 1958. 658 p. 17,000 copies printed.

Resp. Ed.: A.F. Ioffe; Tech. Ed.: R.S. Pevzner.

PURPOSE: This collection of articles is intended for scientists, engineers and technicians.

COVERAGE: The collection, published by the Semiconductor Institute, Academy of Sciences, USSR, under the supervision of Academician A.F. Ioffe, contains Parts II and III of a two-volume work on semiconductors. Part II completes the material on semiconductor devices, begun in Volume I, and Part III describes various semiconductor materials. Lack of space did not permit inclusion of such subjects as crystal counters, thermoelectric generators, atomic batteries, luminophores, semiconductor catalyzers, materials for complex cathodes and various other applications of semiconductors. Ioffe points out that the article by the American scientists V. Johnson and K. Lark-

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

Horovitz on semiconductors at low temperatures deals with a subject hardly covered in the Soviet literature. Similarly, the article by the Swiss scientists G. Busch and U. Winkler fills a gap in the Soviet literature on methods of investigating semiconductor characteristics. These subjects will be dealt with exclusively in a proposed third volume. References appear separately after each article.

TABLE OF CONTENTS:

Foreword 3

PART II. SEMICONDUCTOR DEVICES (Continuation)

Ch. 14. Berman, L.S. Semiconductor Diodes and Triodes (Theory of Operation and Basic Parameters) 7

The author explains the effect of the physical processes occurring in semiconductor diodes and triodes on the operating conditions of the circuit. The author avoids a complicated mathematical treatment of the subject and formulas are given without derivation. There are 66 references, of which 46 are English, 17 Soviet, and 3 German.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

Ch. 15. Ilisavskiy, Yu.V. Avalanche Transistors 75

The author discusses the effects of a strong electric field in semiconductor crystals. He then analyzes the behavior of p-n junctions in germanium and silicon with a large reverse bias and explains the dependence of investigated phenomena on temperature and the effects of various defects in the junction structure. The author also investigates processes occurring in the collector junction of avalanche transistors. In the last chapter he presents a general characteristic of the triode and summarizes the existing presentations of physical processes occurring in these devices which result in the generation of high-frequency oscillations. He presents basic schematic diagrams and examples of avalanche transistor application. In conclusion, he compares these transistors with other devices of this type, and suggests that since they do not possess the several disadvantages characteristic of other devices displaying negative resistance, avalanche transistors may in the future replace thyratrons. There are 46 references, of which 23 are Soviet and 23 English.

Ch. 16. Subashiyev, V.K., and M.S. Sominskiy. Semiconductor Photocells 115

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The authors survey achievements made in the investigation and application of the photoelectric effect and refer to developments by the following Soviet scientists: photoelectric multipliers by L.A. Kubetskiy, P.V. Timofeyev, S.A. Vekshinskiy and N.S. Khlebnikov; photon counters by S.F. Rodionov; antimony-cesium photocells by P.I. Lukirskiy, N.S. Khlebnikov and P.V. Timofeyev; thallium-sulfate photocells by Yu.P. Maslakovets and B.T. Kolomiyets; silver-sulfate photocells by V.K, Bernatskiy and D.S. Geykhman; and germanium photodiodes by S.M. Ryvkin and V.M. Tuchkevich. The article explains the theory f the photoelectric effect as based on quantum physics and describes various types of photocells in the order of their development. At the end of the authors describe photocells developed in East Germany, the USSR, and the USA. There are 49 references, of which 28 are Soviet, 16 English, 3 German, and 2 French.

Ch. 17. Kolenko, Ye.A., and L.S. Stil'bans. Thermoelectric Refrigerators 217

The authors explain the theory of the thermoelectric effect (also called the Peltier effect). In the USSR thermoelectric refrigera-

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tion based on the application of semiconductors was developed theoretically and in practice chiefly by and under A.F. Ioffe and by scientists and engineers of LFTI (Leningradskiy fiziko-tekhnicheskiy institut AN SSSR), later the Semiconductor Institute, AS USSR. The authors devote three chapters to materials suitable for thermoelectric elements. They describe new developments in the theory of thermoelectricity and explain methods of calculation and the design of semiconductor refrigerators. They review various types of refrigerators developed as prototypes by LFTI, including miniature thermostatic units (used mostly for piezoelectric crystal stabilization), and semiconductor refrigerators developed recently for scientific research purposes and for atomic and nuclear research. They illustrate their application to experimental physiology with examples of improved types of these refrigerators ("Termod" and a microscope stage with thermoelectric heating and cooling). There are 35 references, of which 34 are Soviet and 1 English.

Ch. 18. Aresn'yeva-Geyl', A.N. Application of Semiconductors in Strain Measurements ["Tensometry"]. 299

The author briefly explains the principle of strain sensitivity. She describes the following types of strainmeters used for meas-

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uring deformations by changes in electric resistance: carbon resistor elements, a carbon-strip gage, a lead sulfide-strip gage and other types based on semiconductors. There are 24 references, of which 14 are English, 7 Soviet and 3 German.

Ch. 19. Chudnovskiy, A.F. Semiconductor Devices in Agricultural Science and Practice 316

The author describes various types of semiconductor instruments employed for agriculture purposes. There are 38 references, of which 29 are Soviet and 9 English.

PART III. SEMICONDUCTOR MATERIALS

Ch. 20. Smolenskiy, G.A., and A.G. Gurevich. Ferromagnetic Semiconductors 349

The author discuss the application of ferromagnetic semiconductors in multichannel telephony, radar, electroacoustics, electronic counters, cores of induction coils, transformers and filters, permanent magnets, magnetostriction transducers, memory elements, etc. They explain the crystallography of ferrites and the theoretical fundamentals of noncompensated antiferromagnetism.

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They also discuss problems of magnetic saturation in ferrites and their behaviour in a-c magnetic fields and at very high frequencies. Special chapters cover such subjects as electromagnetic oscillations in ferrites and nonlinear processes occurring at very high frequencies. The concluding chapters deal with the electric properties of ferrites and with ferrite materials and their selection. There are 53 references, of which 33 are English and 20 Soviet.

Ch. 21. Smolenskiy, G.A., and V.A. Isupov. Seignetoelectric Materials 425

The authors explain the differences and similarities between seignetoelectric, piezoelectric and ferromagnetic materials. They present a historical survey of seignetoelectricity and provide data tables of seignetoelectric materials. The authors explain the fundamentals of the microscopic theories on seignetoelectric phenomena and discuss in detail the crystal lattice structure, physical properties and problems of producing various seignetoelectric materials. They briefly describe antiseignetoelectric materials and draw attention to recently adopted applications of these materials, e.g., miniature capacitors, nonlinear capacitors, piezoelements and memory elements. There are 35 references, of which 20 are Soviet, 13 English

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and 2 German.

Ch. 22. Ryvkin, S.M. Recombination in Semiconductors 463
The author explains the phenomenological theory of recombination in semiconductors, linear recombination, quadratic recombination and, in detail, the mechanism of recombination for various cases. There are 22 references, of which 17 are Soviet (including 8 translations), and 5 English.

Ch. 23. Mirlin, D.N. Electrical Fluctuations in Semiconductors 517
The author explains the origin of Johnson noise and the application of the Nyquist formula to determine the fluctuation voltage causing this noise. He then explains the application of the probability theory to this investigation and explains definitions and terminology. Experimental methods employed in this investigation are described in detail. There are 79 references, of which 54 are English, 21 Soviet and 4 German.

Ch. 24. Busch, G. and U. Winkler. Determination of Basic Characteristics of Semiconductors by Electrical, Optical and Magnetic Methods (translated from the German) 569

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

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The article deals systematically with all problems connected with methods of research on semiconductors. The authors indicate the best of these methods and explain how to evaluate the obtained results. They explain in detail the theoretical basis of various methods of investigation and present practical arrangements for measurement of the four basic semiconductor characteristics: activation energy, concentration of electrons and holes, effective mass and mobility of electrons and holes. There are 138 references, of which 88 are English, 29 German, 10 French, 10 Swiss and 1 Soviet.

Ch. 25. Johnson, V.A., and K. Lark-Horovitz. Semiconductors at Low Temperatures (translation from the English) 626

The authors describe and discuss the results of their investigations carried out at low temperatures on the following: resonance effects, electrical properties (specific resistance, changes of resistance in a magnetic field, Hall coefficient, thermoelectromotive force), thermal properties and optical properties of semiconductors. There are 211 references, of which 181 are English, 16 Soviet, 7 German, 4 Japanese and 3 French.

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BERMAN, L. S.

L. S. Berman, "Investigation of a resonant semiconducting amplifier with large signals." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep 58.

An investigation of a resonant semiconducting amplifier has been carried out in the middle frequency range on triodes of the III and II6 series. Equations are given to compute the constant components and also the amplitude and phase of the first harmonics of the input and output currents in circuits with a common emitter and common base.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

108-13-3-9/13

AUTHOR: Berman, L. S.

TITLE: Increasing the Useful Output of a Resonance Semiconductor Amplifier by Increasing Its Efficiency. Part II (Povysheniye poleznoy moshchnosti rezonansnogo poluprovodnikovogo usilitelya putëm povysheniya yego kpd, ch. II.)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 3, pp. 70 - 73 (USSR)

ABSTRACT: This is the continuation of part I. in Radiotekhnika, 1957, Vol. 12, Nr 11. It is shown that the use of a second circuit tuned to the second harmonic makes it possible to increase the efficiency of the resonance semiconductor amplifier and to increase its useful output by about two and a half-fold (compared to the usual diagram) without increasing the tolerable straying. The possibility of an amplitude modulation in the resonance amplifier with an additional circuit, at the same time maintaining the constant efficiency is shown. The use of an additional circuit tuned to the second harmonic offers better results than the use of a circuit tuned to the third harmonic. This is explained by a greater amplification factor of the collector voltage at the passage of the collector current, as well as by the

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Increasing the Useful Output of a Resonance Semiconductor Amplifier by Increasing Its Efficiency. Part II

greater utilization factor of the collector voltage. But when using the additional circuit tuned to the second harmonic the maximum voltage at the collector in operation is higher than when using an additonal circuit tuned to the third harmonic . A linear modulation characteristic and a constant efficiency can be obtained with combined modulation (by changing the collector voltage and the exciter amplitude in the case of an excitation modulation of less than 100 %). There are 5 figures, 1 table, and 3 references, 3 of which are Soviet.

SUBMITTED: June 14, 1957

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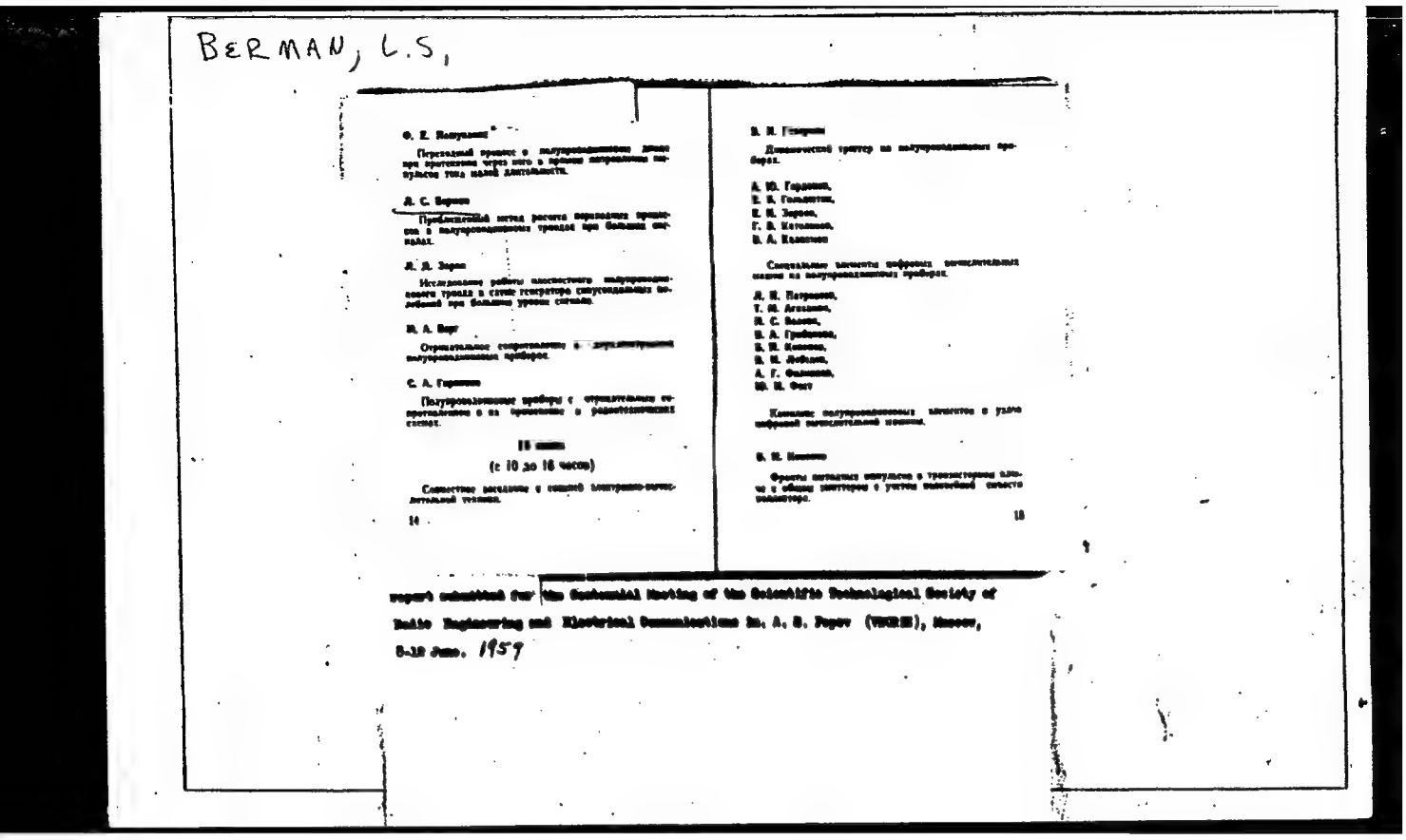

BERMAN, L.S.

Report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNIIR), Moscow, 8-18 June. 1957

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BERMAN, L. S., Cand of Tech Sci -- (diss) " Study of the Performance of Semiconductor Triodes under Strong Signals (in the Diapason of Intermediate Parts"," Leningrad, 1959, 12 pp (Leningrad Electrotechnical Institute of Communications imeni Prof. M. A. Bonch-Bruyevich) (KL 4-60, 118)

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PHASE I BOOK EXPLOITATION SOV/3809

Berman, Lev Solomonovich

Raschet perekhodnykh protsessov v tranzistorakh pri bol'shikh signalakh; stenogramma lektsii (Calculation of Transient Processes in Transistors at Strong Signal Levels; Shorthand Record of a Lecture) Leningrad, 1959. 38 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Seriya "Radiotekhnika") 6,500 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed.: A.G. Fedotov, Engineer; Tech. Ed.: V.L. Gvirts.

PURPOSE: This booklet is intended for general readers interested in transistor problems.

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COVERAGE: The author discusses the general case in which both input signal electromotive force and input signal electromotive force and input impedence are given. Major attention is given to a basic amplifying circuit with a grounded emitter. Some examples of circuit design are also given. The methods of design developed by the author concern alloy-type transistors. No personalities are mentioned. There are 11 references: 5 Soviet and 6 English.

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AVAILABLE: Library of Congress (TK7872.T75B425)

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67857
SOV/105-60-1-19/25

AUTHOR: Berman, L. S.

TITLE: Automatic Voltage Regulation Using the Electrostatic Capacitance of the p-n-p Junction as the Nonlinear Element of the Measuring Block

PERIODICAL: Elektrichestvo, 1960, Nr 1, pp 88 - 89 (USSR)

ABSTRACT: The electrostatic (barrier layer-) capacitance of the p-n-p junction is nonlinear (Refs 1,2). It depends on the voltage according to the approximation equation (1). The electrostatic capacitance of the p-n-p junction showssome advantages compared with the "variconds" (varicond): higher nonlinearity in the range of small voltages, slight dependence of the capacitance on the temperature and stability per unit time. These properties make it possible to use the electrostatic capacitance as a nonlinear element of the measuring block for automatic control circuits. If the nonlinear capacitances are connected to the duplex coils, it is appropriate to use silicon photocells (Ref 4). A direct current voltage stabilizing circuit, employing the electrostatic capacitance of the p-n-p junction is shown in figure 1. The description and the mode of operation

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67857

Automatic Voltage Regulation Using the Electrostatic Capacitance of the p-n-p Junction as the Nonlinear Element of the Measuring Block SOV/105-60-1-19/25

of the circuit follows. Its stabilization coefficient amounts to 120. The necessity of a temperature compensation is the drawback of this voltage regulation circuit. There are 1 figure and 4 Soviet references.

ASSOCIATION: Institut poluprovodnikov AN SSSR (Institute for Semi-conductors of the AS USSR)

SUBMITTED: July 9, 1959

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S/181/60/002/008/040/045
B006/B063

24.7700

AUTHORS: Berman, L. S., Subashiyev, V. K.

TITLE: Study of the Barrier Capacity of Silicon p-n Junctions Obtained by Diffusion

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 8, pp. 1962 - 1965

TEXT: The authors studied the temperature and voltage dependence of the barrier capacity of silicon p-n junctions. Theoretically, the voltage dependence of the barrier capacity, C_b, is given by the relation $C_b = k/\sqrt[n]{V_k - V}$ (the concentration of the mobile carriers being neglected). Provided that the difference in the concentration of donors and acceptors, $N_d - N_a$, changes exponentially, n = 2, and, if there is a linear change, n = 3. The concentration of the mobile carriers can be taken into account by substituting another value (V^*) for the height of the potential barrier, V_k. For negative voltages, V^* is close to V_k and depends only slightly on the external voltage, V. The authors used the method of substitution to

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88387

S/108/60/015/010/015/016/XX
B012/B077

9.7200

AUTHOR: Berman, L. S., Member of the Society

TITLE: Circuits for Calculating the Functions $U_1\sqrt[m]{U_2}$ and $\frac{U_1}{\sqrt[m]{U_2}}$ (if $2 \leq m \leq 3$) by Employing the Electrostatic Capacity of the p-n Junction

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 10, pp. 70-72

TEXT: First, the single circuit as shown in Fig. 1 is presented which can be used to calculate the function $U_1\sqrt[m]{U_2}$ with $2 \leq m \leq 3$. The dependence of the electrostatic capacity of the p-n junction with respect to the applied voltage is used for this calculation. When designing the circuit as shown in the diagram, the author used silicon-p-n junction with a capacity of about 0.1 ÷ 0.2 μf and

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Circuits for Calculating the Functions $U_1\sqrt[m]{U_2}$ and $\frac{U_1}{\sqrt[m]{U_2}}$ (if $2 \leqslant m \leqslant 3$) by Employing the Electrostatic Capacity of the p-n Junction

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a high-quality in the low-frequency range (low-frequency non-linear capacitors). (Ref. 4). Fig. 3 shows a circuit for computing the function $U_1/\sqrt[m]{U_2}$. It is shown that a spread of the parameter k (a constant), S (area of the p-n junction), and U* (the potential nearly equal to the contact potential difference between the p- and n-bands) does not influence the character of the function transformation, but after the interchange of the diode a balancing of the circuit might be necessary. There are 4 figures and 5 Soviet references.

SUBMITTED: November 11, 1959 (initially)
January 25, 1960 (after revision)

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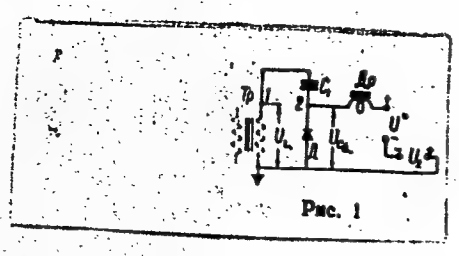

Рис. 1

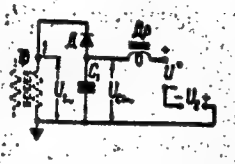

Рис. 3

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86882

S/108/60/015/012/004/009
B010/B059

9.6000 (3702, 1013, 1099)

AUTHOR: Berman, L. S., Member of the Society

TITLE: RC Wobbler With Variable Capacitors for the Low-frequency Range

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 12, pp. 19 - 20

TEXT: A wobbler circuit for the range of 650 - 1050 cps with an RC oscillator in the place of a beat-frequency oscillator is suggested for recording the response characteristic of selective low-frequency amplifiers. Two variable capacitors play the part of the reactance tube. The core of the circuit (Fig.1) is an ordinary RC oscillator (valves 2 and 3) with two variable capacitors, D_2 and D_3, being in its frequency-determining feedback branch. The capacity-controlling bias is applied to D_2 and D_3 through the choke Dr 1. The bias may either be set by hand at the potentiometer R_8 (D_1 - ordinary rectifier), or be supplied from the follower valve 1, into whose input, particularly for wobble operation, the

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RC Wobbler With Variable Capacitors for the Low-frequency Range

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sawtooth voltage from the relaxation oscillator of the oscilloscope is fed. Since for linear wobbling a distorted sawtooth voltage is required at point A (Fig.2), this distortion is brought about by a non-linear potentiometer, R_6,R_7 (two semiconductive resistors) connected to the output of the cathode follower. As a result, any input voltage causes the corresponding and strictly proportional frequency variation of the sound generator. The author points out that the alternating voltage across the p-n junction of the variable capacitor should be much lower than the diode bias in order to prevent amplitude fluctuations from affecting the diode capacity. Proper choice of the resistor, R_{25}, may result in good amplitude stabilization over the entire range of wobbling. Frequency can be varied between 650 and 1050 cps (frequency ratio, 1:1.6) by a control voltage of 0.2-6v. Numerical data: The systems of 6H1П are connected in parallel; D_2 and D_3 are low-frequency varicaps with an initial capacity of 0.14 microfarad; R_9,R_{10} is a 10-kohm tandem potentiometer; Dr_1,Dr_2 are chokes with oxyfer cores, ОШ-20, 2000 turns. There are 4 figures and 3 references: 2 Soviet and 1 US.

SUBMITTED: April 20, 1960

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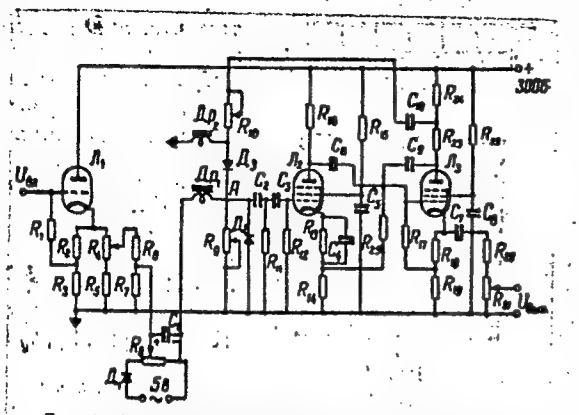
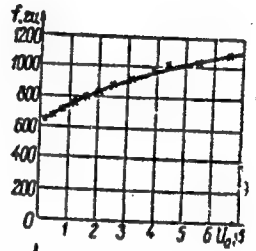
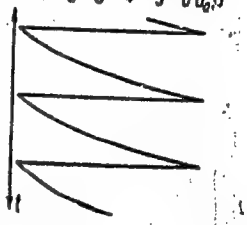


Рис. 1. $Л_1$—6Н1П, оба триода соединены параллельно; $Л_2$, $Л_3$—6Ж1П. $Д_1$—ДГЦ—24; $Д_2$, $Д_3$—низкочастотные варикапы: $C_6/U_{-0} = 0,14$ мкф. R_1—430 к; R_2—5,1 к; R_3—100 к; R_4—470 ом пер.; R_5—5,1 к; R_6—НПС 40—8—3,5; R_7—ТС 1500 ом; R_8—4,7 к пер.; R_9, R_{10}—10 к пер., сдвоенное; R_{11}, R_{12}—75 к, R_{13}—1,8 к, R_{14}—4,3 ом; R_{15}—430 к; R_{16}—75 к; R_{17}—75 к; R_{18}—200 ом; R_{19}—1,1 к; R_{20}—11 к; R_{21}—1 к; R_{22}—01 к, R_{23}—11 к; R_{24}—300 ом; R_{25}—ММТ—6 10 к; C_1—КЭ 1000 мкф 12 в; C_2, C_3, C_4—КВГ 0,02 мкф, C_5—КЭ 20 мкф 12 в, C_6, C_7, C_8—КВГ 2,0 мкф 400 в, C_9, C_{10}— КБГ 10 мкф 400 в $Др_1$, $Др_2$—сердечник оксифер ОШ—20, 2000 витков ПЭЛШО 0,18





Фиг. 2

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9.2150 (1020, 1159, 1331)

S/120/61/000/003/029/041
E202/E135

AUTHOR: Berman, L.S.

TITLE: DC into AC converter on the principle of nonlinear capacity of the p—n junction

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.3, pp.168-169

TEXT: A circuit and detailed analysis of a converter employing two low frequency Hall crystals are given. The principle of the circuit (Fig.1) is based on the action of the alternating voltage $V + v$ with the balanced earth, upon the two resonating circuits placed in series, having low frequency Hall crystals as the capacity elements. In the presence of a DC voltage applied at the far end of a choke connected with the other end between two resonating circuits, an alternating signal will appear between the latter. It is also found that the relation between the output voltage and the input voltage is linear within the range of the input voltage from -75 to +75 mv. With the zero DC voltage the temperature coefficient of capacity of the low frequency crystals was approximately 0.15% per °C, and their nonlinearity coefficient 0.07% per mv. As a further refinement a thermostatic control based

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DC into AC converter on the principle...

on semiconductors and securing ± 0.015 °C is suggested, which will reduce the zero drift to 4-5 μV.
There are 2 figures and 5 references: 4 Soviet and the following English language reference:
Ref.1: R. Brait, A. Kruper, Electronics, 1955, Vol.28, No.4, 135.

ASSOCIATION: Institut poluprovodnikov AN SSSR
(Institute of Semiconductors, AS USSR)

SUBMITTED: July 2, 1960

CAPTIONS TO FIG.1 Circuit of the converter.

$Д_1$, $Д_2$ - low frequency Hall crystals. $Д_p$ - choke.
C_1, C_2 - blocking condensers.
L_1, L_2, L'_1, L'_2 - inductances.
$V_{вх}$ - input of DC voltage.
$V_{вых}$ - output of AC signal.
T_p - output transformer.

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BERMAN, L. S.,

"Investigation of Work of Semiconductor Triodes (Transistors) at Large Signals) (in the Range of Medium Frequencyies)." Dissertation for the Degree of Candidate of Sciences, Leningrad Electrotechnic Inst. of Communication im. M. A. Bonch-Buryevich. Defense held on 24 December 1959.

The work reviews a large group of problems connected with the operation of transistors at large amplitudes. In particular, problems of the inertia of transistors at large signals, and also of the charging and discharging of the diffusion capacitance between the base and the emitter through the nonlinear resistance of the base material are investigated. Two methods are porposed for the calculation of the transients at large signals: by solving the diffusion equation with allowance for the voltage drop on the nonlinear resistance of the base materials, and on the basis of a piecewise-linear approximation of the transistor parameters. An adequate engineering method is proposed for the design of circuits and curves and tables that are convenient for use are presented.

Izv Vysshikh ucheb. zaved, MViSSO SSSR po razdelu Radiotekhnika, vol. 6, No. 1, 1963 p. 98-102 (original checked--Cand. of Sciences as in original.)

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BERMAN, Lev Solomonovich; KOSTIYENKO, A.I., red.; MIKHLIN, E.I., tekhn. red.

[Nonlinear capacitance of semiconductors] Nelineinaia poluprovodnikovaia emkost'. Moskva, Fizmatgiz, 1963. 85 p. (MIRA 16:8)

(Semiconductors) (Transistors)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, Lev Solomonovich; KREGER, D.P., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[New transistor devices in radio engineering; negative resistance devices] Novye radiotekhnicheskie poluprovodnikovye pribory; pribory s otritsatel'nym soprotivleniem. Leningrad, Leningr. dom nauchno-tekhn. propagandy, 1963. 33 p. (Seriia "Poluprovodniki," no.8) (MIRA 16:12)
(Transistors)

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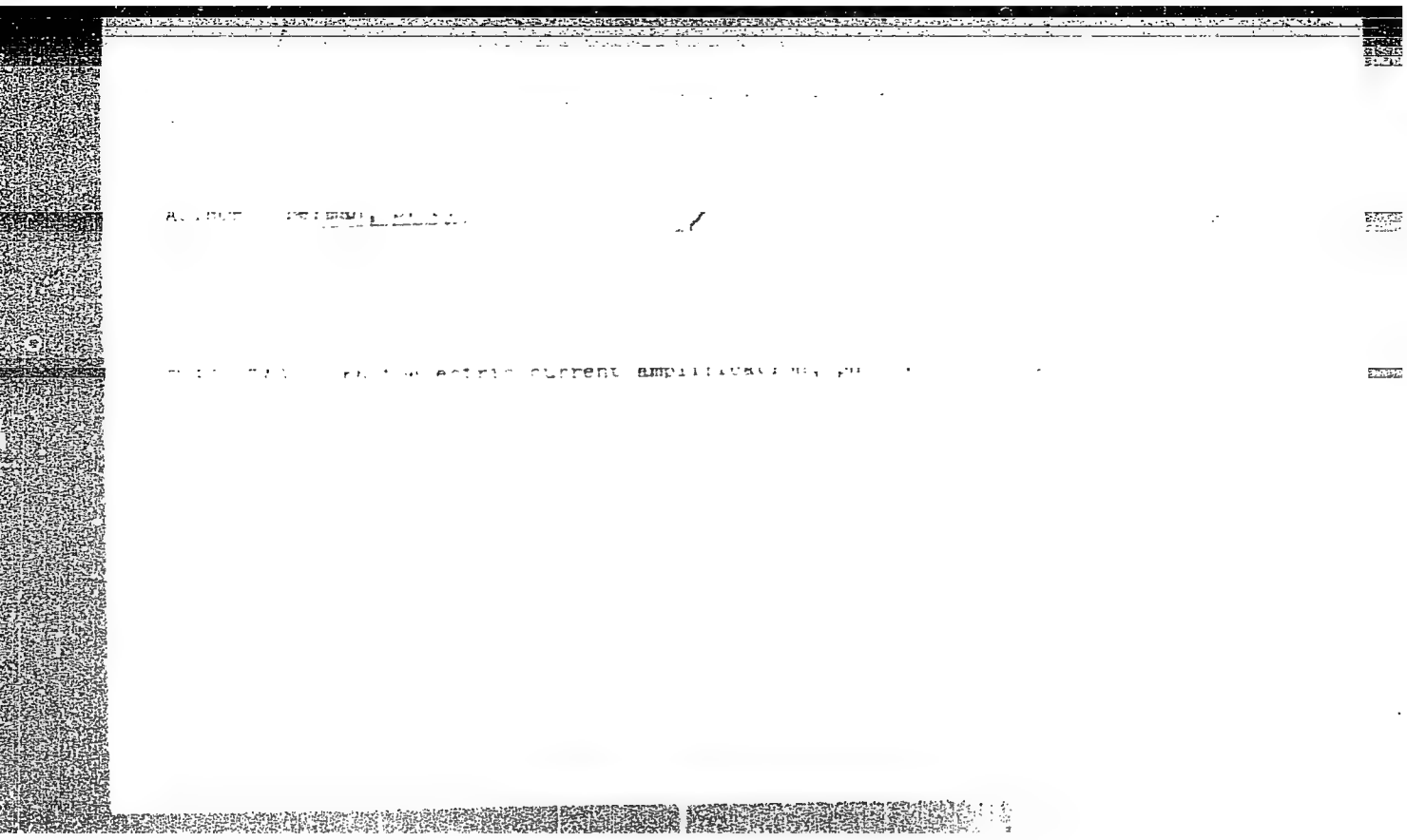

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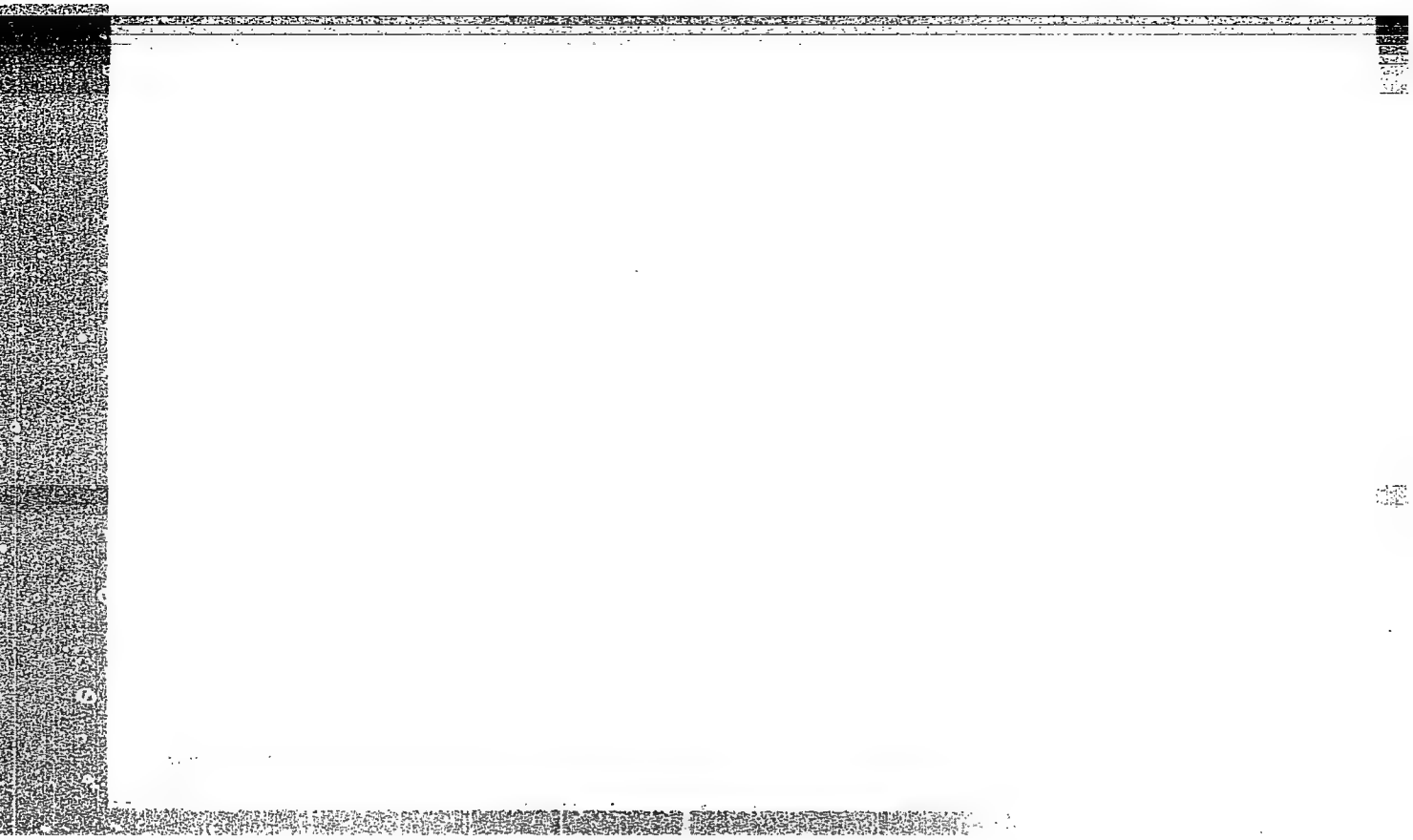

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L 22772-66 EWT(1)/EWA(h)

ACC NR: AP6010872 SOURCE CODE: UR/0115/66/000/002/0041/0043

21
B

AUTHOR: Berman, L. S.

ORG: none

TITLE: Weak photocurrent amplifier based on variable-capacitance photodiodes

SOURCE: Izmeritel'naya tekhnika, no. 2, 1966, 41-43

TOPIC TAGS: amplifier design, photocapacitor, photoelectric detection

ABSTRACT: Two types of photocurrent amplifiers operating in the pulsed mode are described. In the first (see Fig. 1), the variable capacitance photodiode (photovaricap) is placed in an a-c bridge circuit which is fed by a 17.5-kc source. The light source is chopped with a frequency of 5 cps. Amplifier A_1 is tuned to 17.5 kc, and A_2, to 5 cps. Photodiode D_1 is an ordinary detector, and PD is a phase detector with a 0.2-cps bandwidth. The auxiliary light source L, operating in conjunction with photodiode D, generates a signal in phase with the measured chopped photocurrent signal. The circuit is able to measure currents of $2—3 \times 10^{-10}$ amp with photovaricaps based on Si and currents of 2×10^{-11} amp with GaAs photovaricaps. These results apply at room temperature and SNR of 10. The second variant has the same measuring capabilities. It consists of a parallel tank circuit

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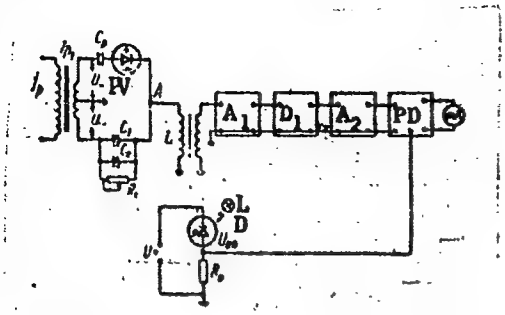

Fig. 1. Photocurrent amplifier

with an inductance and a photovaricap which are tuned to the light chopping frequency (2 kc). The photovaricap is connected to the input of a tuned amplifier which boosts the signals and applies them to the phase detector circuit described above. The temperature stability of this circuit is better than that of the first one. Orig. art. has: 4 figures.

[BD]

SUB CODE: 09, 17/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 002
ATD PRESS: 4229

Card 2/2 dda

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

L 46954-66 EWT(1)

ACC NR: AP6031037 SOURCE CODE: UR/0146/66/009/004/0015/0017

AUTHOR: Berman, L. S.

ORG: Institute of Semiconductors, AN SSSR (Institut poluprovodnikov AN SSSR)

TITLE: Light-switched photovaricap trigger 25

33
B

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 4, 1966, 15-17

TOPIC TAGS: trigger circuit, photovaricap, PHOTODIODE

ABSTRACT: Similar to the well-known varicap triggers (E. O. Keizer, RCA Rev., 1957, v. 18, no. 4, 475-485), a new photovaricap trigger circuit is proposed by the author; the circuit includes two Si photodiodes. The experimental circuit exhibited a sensitivity of 0.003 lm and was stable within 5--40C with a simultaneous exciting-voltage variation of ± 20%. Its photovaricap a-c voltage vs. excitation voltage characteristics at 5, 18, and 40C are shown. The new trigger circuit is intended for light-operated logic devices. Orig. art. has: 2 figures. [03]

SUB CODE: 09 / SUBM DATE: 13Nov60 / ORIG REF: 002 / OTH REF: 001 / ATD PRESS: 5089

Card 1/1 JS UDC: 621.374.3

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

ACC NR: AT6022353 SOURCE CODE: UR/0000/66/000/000/0003/0010

AUTHOR: Berman, L. S.

ORG: none

TITLE: Residual voltage in semiconductor devices with diffused n-p junctions

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya poluprovodnikovykh priborov. Doklady. Moscow, 1966, 3-10

TOPIC TAGS: transistor, semiconductor conductivity, semiconductor carrier, n-p junction, silicon transistor

ABSTRACT: Residual voltage in semiconductor devices with diffused n-p junctions is studied. Residual voltage, in this case, is that voltage that remains across the terminals of a conducting semiconductor switching device that characterizes the resistance of the switching device; the smaller the resistance, the closer is the device to the ideal switch. The residual voltage in diffused n-p junctions is greater than that in fused junctions and cannot be adequately explained with diffusion potentials as in the case of fused junctions. Experiments were conducted to find the influence of the dopant gradient in the collector junction on the residual voltage in high-voltage silicon transistors. A dopant gradient change from 10^{-20} to 10^{-18} cm^{-4} changed the residual voltage from 0.4-1.5 to 2-3 V at a current density of $1A/cm^2$. Experiments

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made with thyristor with high remnant voltages showed that voltage in the central junction is not inversed; it is also shown that the large remnant voltage cannot be explained with the potential drop in the wide base. The authors thank V. V. Garshenin and V. I. Rodov for valuable discussions on the current conduction through the volumetric charge. Orig. art. has: 4 formulas and 5 figures.

SUB CODE: 09/ SUBM DATE: 05Apr66/ ORIG REF: 004/ OTH REF: 003

Card 2/2

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

ACC NR: AP7002713 (A) SOURCE CODE: UR/0115/66/000/012/0081/0082

AUTHOR: Berman, L. S.; Gliberman, A. Ya.; Kagan, M. B.; Landsman, A. P.

ORG: none

TITLE: Light-sensitive devices of silicon and gallium arsenide, based on barrier layer cells

SOURCE: Izmeritel'naya tekhnika, no. 12, 1966, 81-82

TOPIC TAGS: photovaricaps, photoelectric cell, silicon semiconductor, semiconductor device, gallium arsenide, arsenide, silicon compound, photosensitivity

ABSTRACT:
Semiconducting light-sensitive devices ("photovaricaps") based on barrier layer cells made of silicon and gallium arsenide single crystals and having low series resistance were developed and tested. The size of the photovaricaps ranged from 2 x 2 mm to 10 x 10 mm. The capacity for a unit of area for silicon photovaricaps without external voltage C(0) was approximately 0.027 to 0.030 $\mu F/cm^2$, and for gallium arsenide photovaricaps 0.38 to 0.050 $\mu F/cm^2$. The photovaricaps can operate in a range of sonic and ultrasonic frequencies. The most important parameter of the photovaricaps is the photosensitivity coefficient characterizing the relative change of capacitance per unit of luminous flux Φ. The capacitance temperature coefficient for

Card 1/2 UDC: 621.383

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ACC NR: AP7002713

silicon photovaricaps in the photovoltaic mode was approximately 1.5×10^{-3} per degree, and for gallium arsenide photovaricaps 0.8×10^{-3} per degree. The photovaricaps were used for amplifying weak photocurrents and for indicating the displacement of weak light beams. Orig. art. has: 2 formulas and 2 figures.

SUB CODE: 20/ SUBM DATE: 060ct65/ ORIG REF: 004/ OTH REF: 002/
ATD PRESS: 5113

Card 2/2

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

L 28353-66 EWT(m)/EWP(t)/ETI IJP(c) JW/JD

ACC NR: AP5027671 SOURCE CODE: UR/0051/65/019/005/0783/0787 46 44 B

AUTHOR: Berman, L. V; Zhukov, A. G.

ORG: none

TITLE: Optical properties of CaF_2 in the 170-600 μ wavelength range

SOURCE: Optika i spektroskopiya, v. 19, 5, 1965, 783-787

TOPIC TAGS: spectrographic analysis, optic property, calcium compound, absorption coefficient, IR spectrometer

ABSTRACT: The CaF_2 transmissivity was measured in the wavelength range of 170-600 μ at room temperature and in the range of 150-350 μ at -90C by using a long-wave infrared spectrometer described by A. G. Zhukov (Opt. i spektr., 17, 284, 1964). The changes of the coefficient of transmissivity D at various wavelengths (λ) are represented in the attached diagram (see Fig. 1) for samples 0.4 mm (curve 1) and 1.96 mm thick (curve 2) measured at room temperature. The reflectivity (R) of CaF_2 was measured in the wavelength range of 40-110 μ at the angle of incidence of 25° (see Fig. 2). The absorption coefficient k was

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L 28353-66
ACC NR: AP5027671

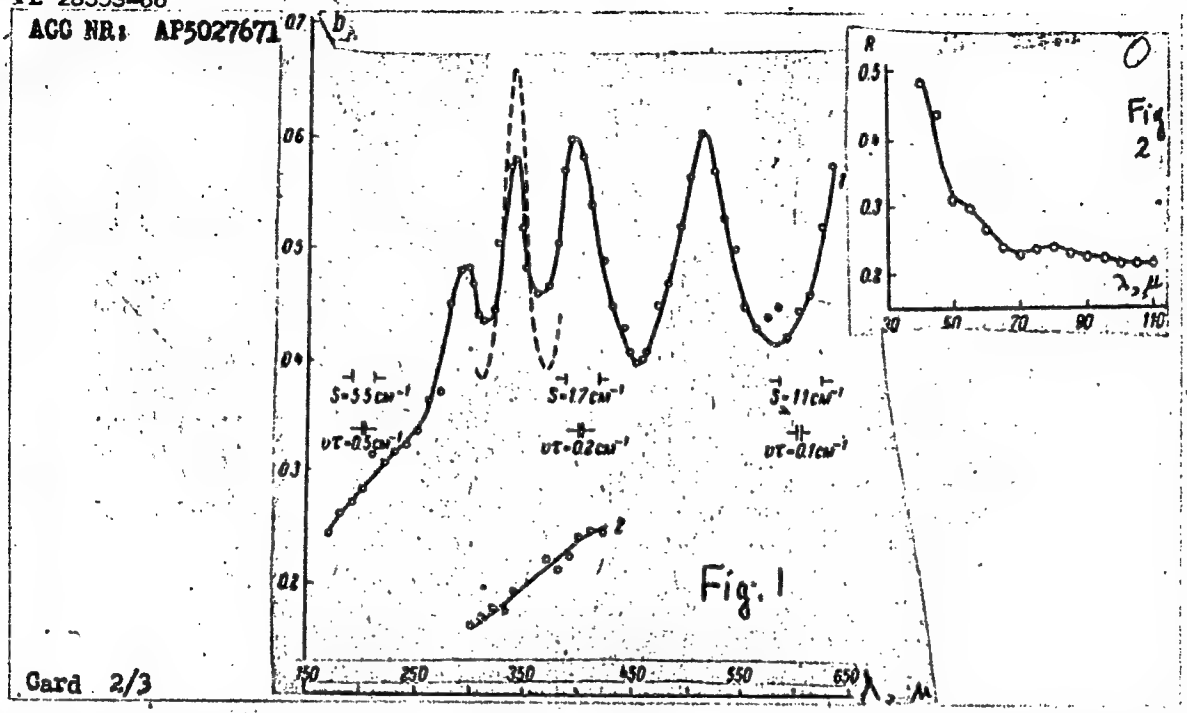

Fig. 1

Fig. 2

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calculated from experimental data. It changed at room temperature from 0.034 (at 170 μ) to 0.016 (at 420 μ). The transmissivity of CaF_2 at -90C was measured in a 1.96 mm thick sample at λ=150-350 μ. At -90C, the value of k was 0.004, i.e., 5 to 10 times smaller than at room temperature. The refractive index n was calculated as 2.58 ± 0.06 from the maximum and minimum on the interference curve of transmissivity and from the formula $\frac{(n-1)^2+k^2}{(n+1)^2+k^2}$ (average error ±4%). The authors thank V. E. Shvetsova for preparation of the low-temperature experiments and A. M. Ol'khovskaya for assistance in measuring. Orig. art. has: 4 fig., 4 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 11Aug64/ ORIG REF: 001/ OTH REF: 012

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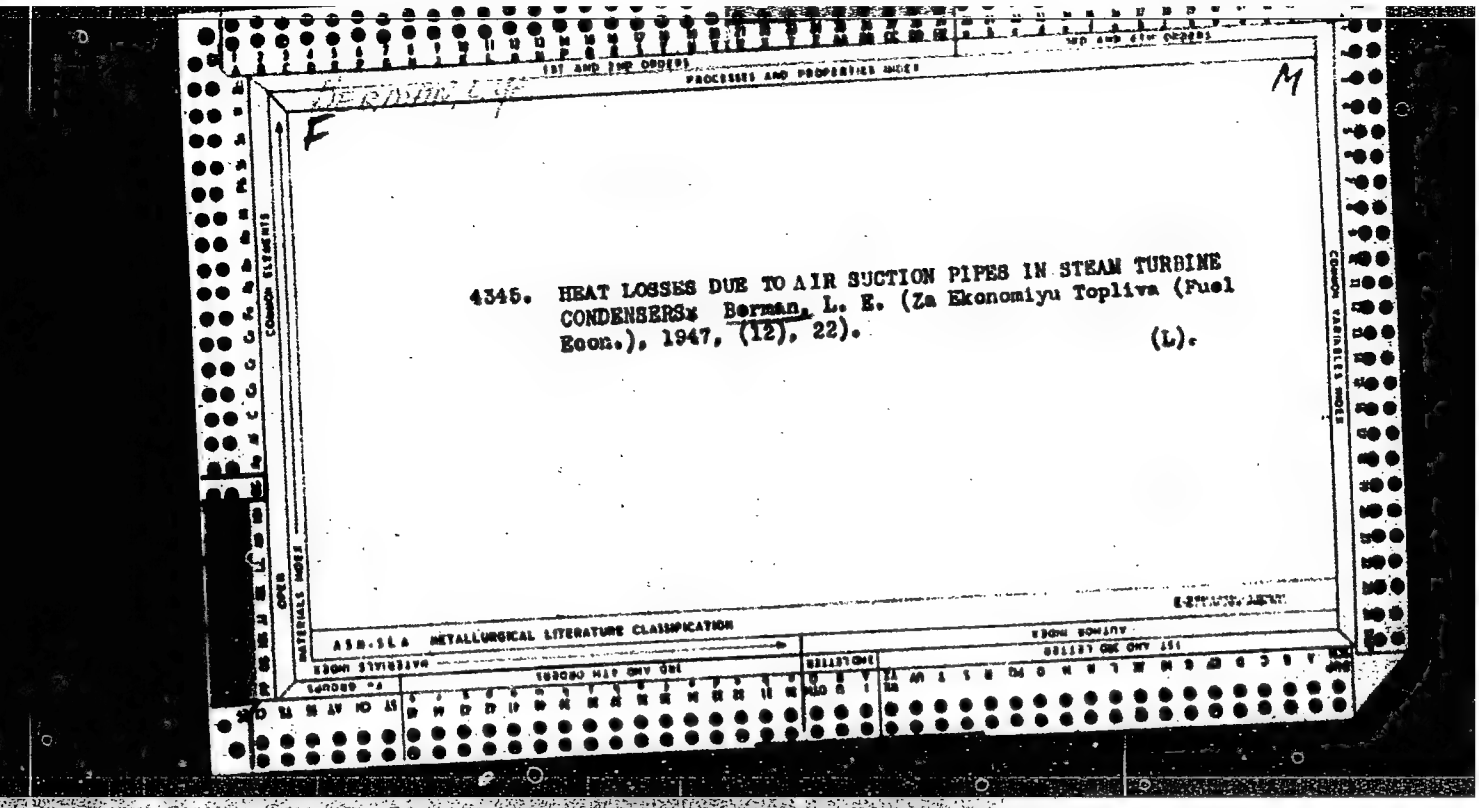

4345. HEAT LOSSES DUE TO AIR SUCTION PIPES IN STEAM TURBINE CONDENSERSx Berman, L. E. (Za Ekonomiyu Topliva (Fuel Econ.), 1947, (12), 22). (L).

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

GORLOV, Petr Ivanovich; BERMAN, Lazar' Yur'yevich; SMIRNOV, L.V., otv. red.; KOSTON'YAN, A.Ya., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[Vertical mine shaft lining]Armirovanie vertikal'nykh stvolov shakht. Izd. 2., dop. i perer. Moskva, Gosgortekhizdat, 1961. 226 p. (MIRA 15:10)

(Shaft sinking)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.A.

BERMAN, M.A.

Critical note on the classification of tuberculosis in 1938. Probl. tuberk., Moskva No. 1:38-39 Jan-Feb 52. (CLML 21:5)

1. Kirovograd.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M. A.

Pneumothorax

Two-chamber artificial pneumothorax. Probl. tub. no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952, Uncl.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.A. (Kirovograd).

Basic symptoms in infiltrative pulmonary tuberculosis. Fel'd.i akush. no.11: 31-32 N '53. (MLRA 6:11)
(Tuberculosis)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

FEL'DBAUM, Aleksandr Aronovich; DUDYKIN, Aleksandr Davydovich; MANOVTSEV, Anatoliy Petrovich; MIROLYUBOV, Nikolay Nikolayevich; BERMAN, M.A., red.; NAPPEL'BAUM, E.L., red.

[Theoretical principles of communication and cotrol] Teoreticheskie osnovy sviazi i upravleniia. [By] A.A.Fel'dbaum i dr. Moskva, Fizmatgiz, 1963. 932 p. (MIRA 17:5)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

ZIGLING, L.V.; Prinimali uchastiye: BERMAN, M.A., vrach; GROSSMAN, I.T., vrach; GOLUBEVA, N.S., vrach; SEMENOVA, A.V.

Clinical aspects and diagnosis of epidemic hepatitis in adults in Leningrad. Trudy LPMI 30:40-53 '63. (MIRA 18:3)

1. Bol'nitsa imeni S.P.Botkina v Leningrade (glavnyy vrach M.M. Figurina, nauchnyy rukovoditel' prof. Ye.S.Gurevich).

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

DENYAKIN, Z.A.; BERMAN, M.A.; RAKIN, V.P.; GOL'DSHTEYN, I.Ye.

Enrichment of clay muds using jet mills. Burenie no.12:15-17 '64.
(MIRA 18:5)

1. Voronezhskiy inzhenerno-stroitel'nyy institut i trest "Kharburneftegaz".

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

DENYAKIN, Z.A.; BERMAN, M.A.; SHUMILOV, S.P.

Using jet-cutting mills in the weighting of circulating fluids.
Neft. i gaz. prom. no.2:29-30 Ap-Je '65. (MIRA 18:6)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.E., kand.tekhn.nauk

Pure bending of a curved beam. Rasch.na prochn. no.11: 96-106 '65.

(MIRA 19:1)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

ALEKSEYEV, P.A.; BERMAN, M.I.; KORNEYEVA, Ye.P.

Clinical and pathohistological picture of S. typhimurium infection in children. Zhur.mikrobiol.epid.i immun. 31 no.1:111-116 Ja '60.
(MIRA 13:5)

1. Iz 2-y Tashentskoy detskoy infektsionnoy bol'nitsy.
(SALMONELLA INFECTIONS in inf. & child.)

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8 (0) SOV/112-57-5-9789

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 5, pp 20-21 (USSR)

AUTHOR: Berman, M. L., Rachkulik, V. I.

TITLE: Application of Luminescent Analysis for Checking Rubber Mixtures in Cable Production (Primeneniye lyuminestsentnogo analiza dlya kontrolya rezinovykh smesey v kabel'nom proizvodstve)

PERIODICAL: Inform.-tekhn. ob. M-vo elektrotekhn. prom-sti SSSR, 1956, Nr 10, pp 31-37

ABSTRACT: Applicability of luminescent analysis in a filtered ultraviolet light (from a mercury-quartz PRK-4 burner and a UFS-3 light filter) to a quick checking of rubber mixtures and ingredients has been studied. Ingredients and rubbers of similar appearance can easily be identified by their luminescence colors. Thus, chemical chalk has a light-blue luminescent color, ground chalk a light-brown color, captax is red, natural rubber is light brown,

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Application of Luminescent Analysis for Checking Rubber Mixtures in Cable . . . .

"nairit" is azure, etc. Buna-S has an azure luminescence that turns to blue, and later to brown, as the time of thermal treatment increases. In some cases, direct observation in the ultraviolet light does not permit reliable identification; a more precise result can be obtained under the action of some chemical reagent. Thus, magnesium oxide and DFG give off similar azure or bluish luminescence; however, MgO can be discerned from DFG by the influence of 25% aqueous solution of NaOH; under ultraviolet illumination, the MgO emits a bright yellowish-green luminescence while DFG does not, etc. Results of the above study enable one to presume that the luminescent analysis can find wide usage in the cable engineering. Tashkent Branch of NIIKP.

A.O.M.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.L.

32-7-23/49

AUTHORS: Rachkulik, V.J. , Berman, M.L., Balashova, N.N.

TITLE: Short Reports
(Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol.23, Nr 7, pp. 829 - 829 (USSR)

ABSTRACT: On this basis of the investigation of the luminescence properties of rubber mixtures and - ingredients used in the cable industry the advantages offered by the method of luminescence for an accelerated control of the quality of rubber mixtures and ingredients are determined. By means of this method it is possible to determine the purity and quality of the component of rubber admixtures and to detect serious faults existing in these mixtures; furthermore, it is possible to sort out rubber and rubber substances of apparently similar character. N.N. Balashova developed a method for the determination of the strength of galvanically applied silver coatings. A solution of 10 g chrome anhydride in 1 litre 0,1-h sulphuric acid was used for the coating of copper, brass, iron, nickel, and other metals with silver without any destructive effects.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

32-7-23/49

Short Reports

ASSOCIATION: Tashkent Branch of the Cable Industry Institute
(Tashkentskoye otdeleniye instituta kabel'noy promyshlennosti)

Scientific Research Institute for the Recording of Sound
(Nauchno-issledovatel'skiy institut zvukozapisi)

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.L.

SOV/138-58-6-9/25

AUTHORS: Blaunshteyn, I.M., and Berman, M.L.

TITLE: The Use of the Radioactive Isotope of Sulphur (Primeneniye radioaktivnogo izotopa sery)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 6, pp 31 - 33 (USSR)

ABSTRACT: The properties of rubbers depend not only on their composition, but to a large degree on the conditions of mixing and vulcanisation. To obtain uniform physico-mechanical properties it is necessary to achieve a very even distribution of the ingredients in the rubber. The addition of sulphur to the rubber during vulcanisation is most important. As a first approximation the strength of the vulcanisate is proportional to the quantity of bound sulphur (Ref. 1). The distribution of sulphur in hose rubber was investigated, and the dependence of the physical-mechanical properties of these rubbers on the method of introducing sulphur into the mixture. The investigations were carried out with the aid of the radioactive isotope S-35 which was diluted by dissolving active and inactive sulphur in benzene, toluene or in carbon tetrachloride. Five methods were investigated, by

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The Use of the Radioactive Isotope of Sulphur

introducing: (1) pure sulphur, (2) sulphur in master batches, preferably compounded with the rubber in a ratio 1:1, (3) sulphur in a mixture with kaolin (1:6), (4) sulphur in a mixture with the plasticiser PP - 75% paraffin + 25% petrolatum (1:3), (5) sulphur in admixture with vaseline oil (3:1). The mixtures were prepared in the laboratory mixer Nr 2; conditions of mixing were kept constant. The activity was measured by calculating the impulses in a type B counter, and by autoradiography of NIKFI laminae. The rubber samples had a 20 mm diameter. It was found that in the vulcanised rubber the sulphur migrates to the surface at a much reduced rate, and that the uniform distribution of the sulphur in the rubber depends on the method of introducing the sulphur into the mixture (Fig 1 and Table 2). The physico-mechanical properties of the rubbers were found to be

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The Use of the Radioactive Isotope of Sulphur

uniform if the sulphur was distributed evenly (Fig 2). It is recommended that the sulphur should be added to the rubber in admixture with vaseline oil.

There are 2 figures, 3 tables and 2 references (Soviet).

ASSOCIATION: Tashkentskoye otdeleniye NIIKP (Tashkent Department NIIKP).

1. Rubber--Production 2. Rubber--Properties 3. Sulfur isotopes (Radioactive)--Applications

Card 3/3

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.L.

PHASE I BOOK EXPLOITATION SOV/4973

Sovetshchaniye po lyuminestsentnomu analizu, 8th, 1959

Metody lyuminestsentnogo analiza; materialy sovetshchaniya (Methods for Luminescence Analysis; Materials of the 8th Conference) Minsk, Izd-vo AN BSSR, 1960. 247 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Belorusskoy SSR. Institut fiziki.

General Ed.: N. A. Borisevich; Ed.: L. Timofeyev; Tech. Ed.: K. Silarko.

PURPOSE: This collection of articles is intended for chemists and physicists interested in molecular luminescence, and for scientific personnel concerned with applications of this and related phenomena in research in the life sciences.

COVERAGE: The collection contains 28 papers read at the Eighth Conference on Luminescence, which took place 19-24 October, 1959 (place of conference not given). These studies are concerned principally with the development of new luminescence methods for quantitative and qualitative chemical analysis, and with the applications of luminescence in medical and biological research. They discuss luminescence methods for the determination of uranium, mercury, magnesium, aluminum, boron, and other elements, as well as luminescence methods for the diagnosis of skin cancer and the detection of grippe virus, pathogenic microorganisms, etc. The structural design of new instruments for luminescence analysis is described. The conference was not concerned with studies on the phosphorescence of crystal phosphores. There is a discussion of the contributions of Soviet specialists in molecular luminescence in the course of the year and a brief preceding the conference. The articles of V. L. Ketreyev (p. 79) and of V. F. Petrishchev (p. 79) have been annotated because of their importance. No personalities are mentioned. References accompany most of the articles.

Tsitlidze, M. M. Luminescence Method and Device for the Analysis of Water-Oil Emulsions 87

Fridman, A. E., L. Ye. Chechik, A. D. Chugay, and M. L. Frolovskiy (Kiyevskiy zavod "Kranoy Metallist," Kiyevskiy universitet (Kiev University), Kiyevskiy Nauchnaya Plant "Krasnyy Metallist," Kiyev University)). Luminescence Analysis of Rubbers 90

Berman, M. L. [Pseudomonadly pseudomonas-fluorescens, Institut mikrobiologii prezydiuma AN SSSR (Institute of Microbiology Presidium AS USSR)]. Scientific Research Institute of Cable Industry)]. Investigation by the Luminescence Method of the Diffusion of Liquids in Rubbers 94

Prozorov, V. I.; and V. D. Zaytsev (Institut biologicheskoy fiziki AN SSSR (Institute of Biological Physics AS USSR)). Luminescent Microscopy of Living Organs 105

Agrestidi, V. D. (Kishinevskiy gosudarstvennyy meditsinskiy institut (Kishinev State Medical Institute)). Luminescence Microscopic Analysis of Skin Cancer 107

Konovalov, A. F., and K. M. Yashchuk-Ilimik. Study by the Luminescence Microscopy Method of the Morphology of Certain Spirogenous and Aspirogenous Bacteria 111

Bukhbinder, Yu. I. (Institut pitaniya AMN SSSR (Institute of Nutrition of the Academy of Medical Sciences of the USSR)). Experimental Use of Luminescence Microscopy in Mycology 118

Card 6/10

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

S/081/61/000/008/017/017
B110/B203

AUTHOR: Berman, M. L.

TITLE: Study of diffusion of liquids in rubbers by the luminescence method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1961, 645 abstract 8P487 (8P487) (Metody lyumineszentn. analiza, Minsk, AN BSSR, 1960, 94 - 97)

TEXT: The author studied the diffusion of transformer oil into bright rubber of the following composition: natural rubber plasticate = 25%; СКБ 35-40 рА (SKB 35-40 rD) = 25%; chalk = 38.95%; S = 0.05%; Thiuram = = 1.5%; paraffin = 5%; Neozone D = 0.5%; ZnO = 1.5%; MgO = 2.5%. Parallelepiped-shaped samples were dipped into the oil and kept there for some time. The geometric dimensions and the weight before and after exposure were measured. Ultraviolet rays from a ПРК-4 (PRK-4) lamp, after passing a УФС-3 (UFS-3) light filter, got through the sample slit onto the film of a photographic apparatus which photographed the samples on a scale of 1 : 1. Control samples were also photographed. The films were photo-

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Study of diffusion of....

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B110/B203

metrically measured by an MF-2 (MF-2) microphotometer. The intensity of fluorescence for rubbers of the same composition and production method is practically constant. The difference in blackening of photographs of test and control samples was taken as a measure for the quantity of oil absorbed. A direct dependence of the blackening of photographs on the concentration in g/cm^2 oil in the rubber was observed. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

HERMAN, M.L.; FLORENTSEV, V.I.

Calculating the activity of gamma emitters for radioisotopic devices. Izm.tekh. no.1:53-54 Ja '62. (MIRA 14:12)
(Radioisotopes--Industrial applications)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.M.

BERMAN, M.M., klinicheskiy ordinator

Changes in tooth temperature during tooth preparation. Stomatologiia 36 no.6:68-70 N-D '57. (MIRA 11:2)

1. Iz kafedry ortopedicheskoy stomatologii (zav. - prof. V.Yu. Kurlyandskiy) Moskovskogo meditsinskogo stomatologicheskogo instituta (dir. - dotsent G.M.Beletskiy)
(TEETH)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.M, Cand Med Sci -- (diss) "Concerning changes in the pulp of the tooth after its preparation." Mos, 1958, 7 pp (Min of Health RSFSR. Mos Med Stomatological Inst) 200 copies (KL, 23-58, 111)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.M.

Some supplementary data on the temperature sensitivity of teeth. Stomatologiia 40 no.4:67-68 Jl-Ag '61. (MIRA 14:11)

1. Iz kafedry ortopedicheskiy stomatologii (zav. - prof. V.Yu. Kurlyandskiy) Moskovskogo meditsinskogo stomatologicheskogo instituta (dir. - dotsent G.N.Beletskiy).
(TEMPERATURE--PHYSIOLOGICAL EFFECT)
(TEETH--DISEASES)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

AKSEL'ROD, Solomon Moiseyevich; BERMAN, Mark Mikhaylovich; VINOGRAY, Lazar' Il'ich; GOL'DZAMD, Samuil Shlemovich; DUGIN, Yakov Sergeyevich; DULEPOV, Konstantin Vasil'yevich; KALUGA, Ivan Ivanovich; LERNER, Yefim L'vovich; LUTSKIY, Moisey Leybovich; PILETSKIY, Vladimir Kirillovich; SADOVNIKOV, Petr Pavlovich; SHIYAMOVICH, Abram Arcnovich; VASIL'YEV, B.A., red.; SOBOLEV, Ye.M., tekhn. red.

[Problems of radio engineering and radar]Zadachnik po radiotekhnike i radiolokatsii. [By]S.M.Aksel'rod i dr. Moskva, Gosenergoizdat, 1962. 414 p. (MIRA 15:12)

(Radio) (Radar)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, M.M.

Thermal burn of the dental pulp. Stomatologiia 42 no.3:70-72 My-Je '63 (MIRA 17:1)

1. Iz poliklinikiki No. I AN SSSR (glavnyy vrach N.M.Repnikov).

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ANDON'YEV, S.M.; GLAZKOV, P.G. [deceased]; KUCHIN, V.A. KONDRAT'YEV, Ye.M.; LEVITASOV, Ya.M.; MAKAROV, K.I.; PANKRATOV, F.V.; PEVNYY, N.I.; POKRAS, L.M.; POCHTMAN, A.M.; TESNER, P.A.; SHEYNFAYN, F.I.; SHKLYAR, T.I.; Prinimali uchastiye: BERMAN, M.N.; VARFALOMEYEV, F.L.; ROBIN, M.A.; MOYSIYEVICH, G.I.; SAPIRO, V.G.; ALEKSEYEV, L.M.; POPOVA, R.S.

Heating Martin furnaces with natural gas using reformers. Gaz. prom. 9 no.11:14-17 '64. (MIRA 17:12)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, N. A.

BERMAN, N. A. -- "The Development of the Blood Vessels of the Human Ovary after Birth." Leningrad Pediatrics Medical Inst. Leningrad, 1955. (Dissertation for the Degree of Candidate of Medical Sciences.)

SO: Knizhnaya Letopis', No 5, Moscow, Feb 1956

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CHEKHARINA, Ye.A.; BERMAN, N.A.

Teratoma of an undescended testicle. Vop. onk. 4 no.5:620-623 '58. (MIRA 12:1)

1. Iz II khirurgicheskogo otdeleniya (zav. - prof. A.I. Bakov) Instituta onkologii AMN SSSR (dir. - deystv. chlen AMN prof. A.I. Serebrov). Adres avtorov: Leningrad, P-129, 2-ya Berezovaya alley, d. 3. Institut onkologii AMN SSSR.

(TERATOMA, case reports
testicular, of undescendent testis (Rus))
(CRYPTORCHIDISM, compl.
taratoma of undescendent testis (Rus))
(TESTS, neoplasms,
same)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, N.A., kand.med.nauk, CHAKLIN, A.V., kand.med.nauk.

Outpatient treatment of patients with neoplasms of the urologenital system. Urologiia 23 no.3:38-42 My-Je '58 (MIRA 11:6)

1. Iz urologicheskogo otdeleniya (zav. prof. I.N. Shapiro) i orgmetodotdela (zav. A.V. Chaklin) Instituta onkologii (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov; nauchnyy konsul'tant - deystvitel'nyy chlen AMN SSSR prof. N.N. Petrov) AMN SSSR.

(UROGENITAL SYSTEM, neoplasms
dispensary serv. after radical ther., problems (Rus))
(OUTPATIENT SERVICES,
urogenital neoplasms after radical ther. (Rus))

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BERMAN, N.A., kand. med. nauk.; SIDORENKO, L.N.

A rare variation of anomaly of the urinary tract. Urologiia 23 no.6: 51-52 N-D '58. (MIRA 11:12)

1. Iz 1-go khirurgicheskogo otdeleniya (zav. - chlen-korrespondent AMN SSSR prof. S.A. Kholdin) Instituta onkologii AMN SSSR.
(URINARY TRACT, abnorm.
accessory kidney with crossed ureter (Rus))

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BERMAN, N.A., kand.med.nauk; KARLIN, M.I., kand.med.nauk; SHMUYLOVICH, Ya.M., vrach.

Toxiderma during treatment with sinestrol. Vest.derm. i ven. 32 no.1:77-78 Ja-F '58. (MIRA 11:4)

1. Iz Kozhno-venerologicheskogo dispansera No.3, Leningrad.
(SKIN--DISEASES) (ESTROGENS)

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, N.A.; KAGANSKIY, V.Ye.

Tomography in the diagnosis of tumors of the prostate. Vop. onk. 6 no.7:71-74 Je '60. (MIRA 14:4)
(PROSTATE GLAND--TUMORS) (BLADDER--RADIOGRAPHY)

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BERMAN, N.A.; KAGANSKIY, V. Ye. [deceased]

Value of tomography in the diagnosis of prostatic tumors. Vop. onk. 9 no.7:79-85 '63 (MIRA 16:12)

1. Iz rentgenologicheskogo otdeleniya (zav. - prof. L.M.Gol'dshteyn [deceased]) i urologicheskogo otdeleniya (zav. - prof. I.N.Shapiro [deceased]) Instituta onkologii AMN SSSR (dir. deystvitel'nyy chlen AMN SSSR prof. A.I.Serebrov). Adres Bermana: Leningrad, P-129, 2-ya Berezovaya al., 3, Institut onkologii AMN SSSR.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, N.A.; LEVKOVICH, Yu.I.

Photocystoscopy in bladder tumors. Vop. onk. 9 no.12:18-22 '63.
(MIRA 17:12)

1. Iz nauchno-poliklinicheskogo otdela (zav. - starshiy nauchnyy sotrudnik K.A. Pavlov) i laboratorii nauchnoy fotografii (zav. - Yu.I. Levkovich) Instituta onkologii AMN SSSR (direktor - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov). Adres avtorov: Leningrad, 2-ya Berezovaya alleya, d.3, Institut onkologii AMN SSSR.

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"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010014-8

BERMAN, N.A.; KOSAREVA, A.N.

Cancer of the female urethra; according to data of the Institute of Oncology of the Academy of Medical Sciences of the U. S. S. R. Vop. onk. 11 no.9:66-71 '65. (MIRA 18:9)

1. Iz ginekologicheskogo otdeleniya (zav. - prof. V.P.Tobilevich) i nauchno-poliklinicheskogo otdeleniya (zav. - starshiy nauchnyy sotrudnik K.A.Pavlov) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I.Serebrov).

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GERSHANOVICH, M.L.; BERMAN, N.A.

Results of treatment of early and late serious radiation injuries of the urinary bladder with 4-methyluracil (methyluracil, metacil). Vop.onk. 11 no.11:47-52 '65. (MIRA 19:1)

1. Iz laboratorii lekarstvennykh sredstv profilaktiki i terapii zlokachestvennykh opukholey (zav. - zasluzhennyy deyatel' nauki RSFSR prof.N.V.Lazarev), otdeleniya konservativnoy terapii (ispolnyayushchiy obyazannosti zaveduyushchego - starshiy nauchnyy sotrudnik M.L.Gershanovich), otdeleniya opukholey zhenskikh polovykh organov (zav. - prof.V.P.Tobilevich) i nauchno-poliklinicheskogo otdela (zav. - starshiy nauchnyy sotrudnik K.A.Pavlov) Instituta onkologii AMN SSSR (direktor - deystvitel'nyy chlen AMN SSSR, zasluzhennyy deyatel' nauki RSFSR prof.A.I.Serebrov).

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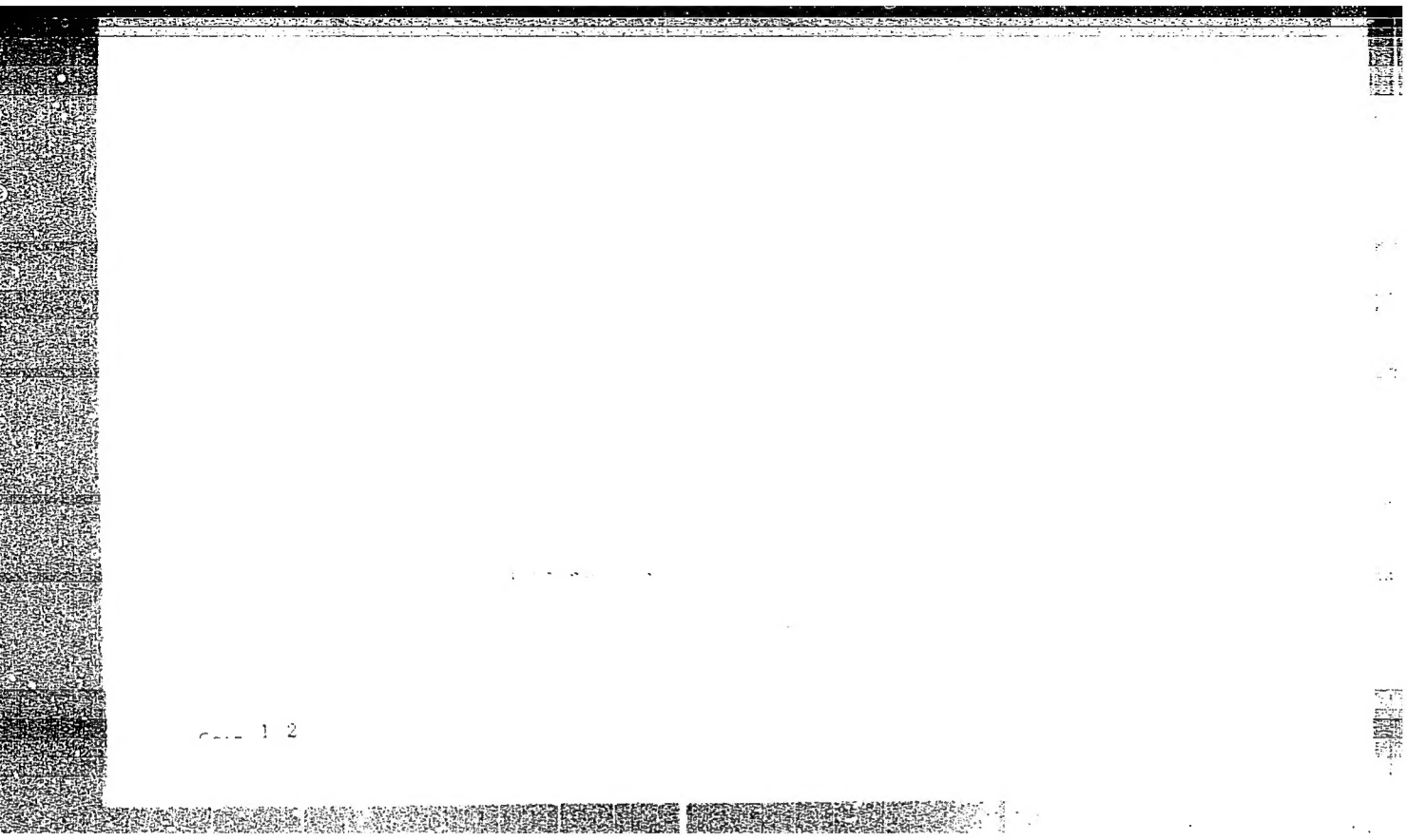

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